

Chronic Obstruction and Pulmonary Diseases and Allied Conditions
Summary of Methods and Data for Estimate of Costs of Illness

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|---|-----------------|
| 1. Estimated Total Economic Cost | \$ 37.3 billion |
| Estimated Direct Cost | \$ 21.6 billion |
| Estimated Indirect Cost | \$ 16.2 billion |
| Reference Year | 1998 |
| IC Providing the Estimate | NHLBI |
| | |
| Direct Costs Include: Other related nonhealth costs | No |
| Indirect Costs Include: | |
| Mortality costs | Yes |
| Morbidity costs: Lost workdays of the patient | Yes |
| Morbidity costs: Reduced productivity of the patient | No |
| Lost earnings of unpaid care givers | No |
| Other related nonhealth costs | No |
| Interest Rate Used to Discount Out-Year Costs | 6 % |
| 2. Category code(s) from the International Classification of Diseases, 9th Revision, Clinical Modification, (ICD-9-CM) for all diseases whose costs are included in this estimate: <u>490-496</u> . | |
| 3. Estimate Includes Costs: | |
| Of related conditions beyond primary, strictly coded ICD-9-CM category | No |
| Attributable to the subject disease as a secondary diagnosis | No |
| Of conditions for which the subject disease is an underlying cause | No |
| 4. Population Base for Cost Estimate (Total U.S. pop or other) | Total U.S. pop. |
| 5. Annual (prevalence model) or Lifetime (incidence model) Cost: | Annual |
| 6. Perspective of Cost Estimate (Total society, Federal budget, or Other) | Total Society |
| 7. Approach to Estimation of Indirect Costs | Human Capital |
| 8. <u>Source of Cost Estimate</u> : (Reference published or unpublished report, or address and telephone of person/office responsible for estimate) | |

The Morbidity and Mortality Chartbook on Cardiovascular, Lung, and Blood Diseases, 1996, National Heart, Lung, and Blood Institute, May 1996 has cost estimates for 1993. The next Chartbook is due June 1998 and will have cost estimates for 1998.

9. Other Indicators of Burden of Disease:

This disease group is the fourth leading cause of death. Included are chronic bronchitis, asthma, and emphysema; present in 14 million, 15 million, and 2 million persons respectively, in 1995.

10. Commentary:

Direct costs by type of cost for total respiratory diseases in 1995 were estimated by Tom Hodgson (National Center for Health Statistics) in a report to be published. He used a variety of survey data from NCHS and the Health Care Financing Administration, and elsewhere. COPD

and Allied Diseases costs for 1995 are estimated by applying to Hodgson's total respiratory costs the proportions that COPD are of total respiratory diagnoses for: a) hospital days, b) physician office visits, c) drug mentions in physician visits, d) home health care discharges, and e) nursing home discharges as reported in the latest NCHS surveys. From the NCHS publication "Health, US 1996-97", total personal health expenditures increased 19% from \$740.5 billion in 1992 to \$878.8 billion in 1995. COPD costs for 1995 were increased by that same percentage to estimate the cost in 1998. Only the primary diagnosis of COPD reported in the surveys was considered. Allocating costs according to the primary diagnosis eliminated overlap with other diseases. Costs associated with COPD as a comorbid condition to some other primary diagnosis were not included. Costs incurred by family or other personal caregivers for COPD patients cannot be estimated and were not included. The national health expenditures that cannot be allocated to diseases (e.g. construction and research) were not included in the COPD direct costs.

The indirect morbidity cost of COPD represents lost earnings from lost work days due to COPD illness, i.e. lost productivity in 1998. Four groups of persons are included: a) labor force, b) institutionalized c) homemakers, and d) persons unable to work. An estimate of cost of total respiratory diseases in 1980 was made by the National Center for Health Statistics. From that an estimate for COPD was derived. That estimate has been adjusted by a 1980-1998 inflation factor derived from mean earnings of full-time year-around workers as reported by the Bureau of the Census and extrapolated to 1998.

The indirect mortality cost of COPD in 1998 represents lost productivity based on lost earnings attributed to premature deaths from COPD in that year. It was estimated by applying the numbers of COPD deaths in 1996, by age and sex, reported from national vital statistics, to the age-sex estimates of the present value of lifetime earnings discounted at six percent. These lifetime values were estimated for 1992 by Dr. Dorothy Rice (University of California, San Francisco). They are not published. Those values were inflated to 1998 using the inflation factors mentioned above. COPD deaths in 1996 were those where COPD was the underlying cause of death regardless of what other contributing causes may have been present. Other deaths, where COPD was a contributing cause, were not included. The accuracy of estimates of the present value of lifetime earnings has not been assessed by anyone at NHLBI; estimates were taken at face value.